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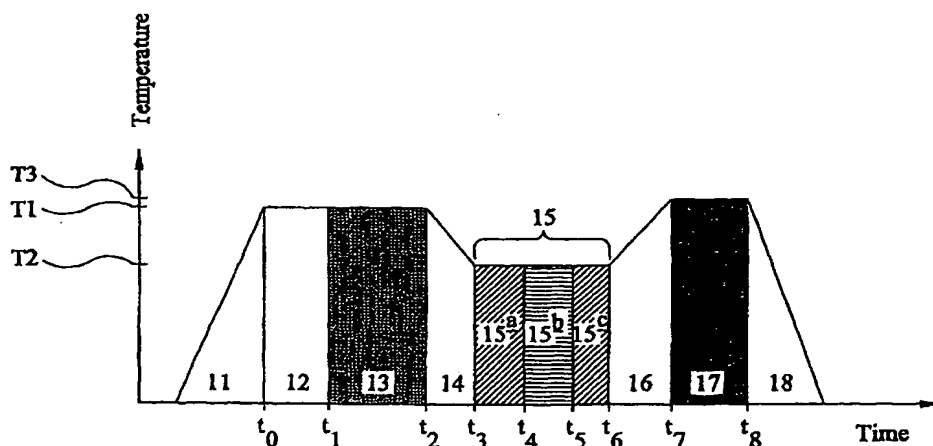
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- (71) Applicant (for all designated States except US): **SHARP KABUSHIKI KAISHA** [JP/JP]; 22-22, Nagaikecho, Abeno-ku, Osaka-shi, Osaka 545-8522 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BOUSQUET, Valerie** [FR/GB]; The Top Flat, Manor House, Henley Road, Sandford on Thames, Oxford OX4 4YN (GB). **HOOPER, Stewart Edward** [GB/GB]; 21 Thorne Close, Kidlington, Oxfordshire OX5 1SJ (GB). **BARNES, Jennifer Mary** [GB/GB]; 13 Larkfields, Headington, Oxford OX3 8PF (GB). **HEFFERNAN, Jonathan** [IE/GB]; 33 Denton Close, Oxford OX2 9BW (GB).
- (74) Agents: **YAMAMOTO, Shusaku** et al.; Fifteenth Floor, Crystal Tower, 2-27, Shiromi 1-chome, Chuo-ku, Osaka-shi, Osaka 540-6015 (JP).
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(54) Title: MBE GROWTH OF A SEMICONDUCTOR LAYER STRUCTURE



(57) **Abstract:** A method of MBE growth of a semiconductor layer structure comprises growing a first (Al,Ga)N layer (step 13) over a substrate at the first substrate temperature (T1) using ammonia as the nitrogen precursor. The substrate is then cooled (step 14) to a second-substrate temperature (T2) which is lower than the first substrate temperature. An (In,Ga)N quantum well structure is then grown (step 15) over the first (Al,Ga)N layer by MBE using ammonia as the nitrogen precursor. The supply of ammonia to the substrate is maintained continuously during the first growth step, the cooling step, and the second growth step. After completion of the growth of the (In,Ga)N quantum well structure, the substrate may be heated to a third temperature (T3) which is greater than the second substrate temperature (T2). A second (Al,Ga)N layer is then grown over the (In,Ga)N quantum well structure (step 17).



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